In the Claims

This listing of claims will replace all prior versions and listings of claims in this application.

1 (previously presented). A vector for secretory expression of an intact MK family protein by methylotrophic yeast, said vector comprising a gene encoding a mature MK family protein ligated to a signal sequence of αl factor from *Saccharomyces cerevisiae.*

2 (currently amended). The vector according to claim 1 comprising components (a) to (g) below:

(a) a promoter sequence of a methanol-inducible alcohol oxidase gene (AOX1) from *Pichia pastoris,*

(b) a signal sequence of αl factor from *Saccharomyces cerevisiae,*

(c) a gene encoding a mature MK family protein, wherein said gene is ligated to (b),

(d) a transcription termination sequence of a methanol-inducible alcohol oxidase gene (AOX1) from *Pichia pastoris,*

(e) a selection marker gene functioning in *Escherichia coli* and methylotrophic yeast,

(f) a replication origin functioning in *Escherichia coli,* and

(g) 5' and 3' end sequences ~~within~~ of the AOX1 gene, wherein said sequences allow ~~for the~~ site-specific homologous recombination to a methylotrophic yeast chromosomal DNA to occur.

3 (original). The vector according to claim 1, wherein said MK family protein is MK protein.

4 (original). The vector according to claim 1, wherein said MK family protein is PTN protein.

5 (currently amended). A transformant comprising methylotrophic yeast transformed with a vector for secretory expression of an intact MK family protein, said vector comprising a gene encoding a mature MK family protein ligated to a signal sequence of α1 factor from *Saccharomyces cerevisiae*, wherein said transformant has increased secretory expression of an intact MK family protein compared to an untransformed yeast.

6 (previously presented). The transformant according to claim 5, wherein said transformant is pPIC9DP-hMK/SMD1168, said MK family protein is MK protein, and said methylotrophic yeast is strain SMD1168.

7 (previously presented). The transformant according to claim 5, wherein said transformant is pPIC9-hPTN/GS115, said MK family protein is PTN protein, and said methylotrophic yeast is strain GS115.

8 (currently amended). A method for producing an intact MK family protein, said method comprising culturing a transformant comprising methylotrophic yeast transformed with a vector for secretory expression of an intact MK family protein and inducing the expression of MK protein under the conditions of 20°C and pH3 after proliferation at pH 4, said vector comprising a gene encoding a mature MK family protein ligated to a signal sequence of α1 factor from *Saccharomyces cerevisiae* and recovering secretory expression products.

9 (previously presented). The method according to claim 8, said method comprising:

(a) culturing a transformant comprising methylotrophic yeast transformed with a vector for secretory expression of an intact MK family protein, said vector comprising a gene encoding a mature MK family protein ligated to a signal sequence of α1 factor from *Saccharomyces cerevisiae*, wherein said transformant is pPIC9DP-hMK/SMD1168, said MK family protein is MK protein, and said methylotrophic yeast is strain SMD1168,

(b) inducing the expression of MK protein under the conditions of 20°C and pH 3 after proliferation at pH 4, and

(c) recovering secretory expression products.

10 (currently amended). The transformant, according to claim 5, wherein said vector comprises

(a) a promoter sequence of a methanol-inducible alcohol oxidase gene (AOX1) from *Pichia pastoris*,

(b) a signal sequence of α1 factor ~~derived~~ from *Saccharomyces cerevisiae*,

(c) a gene encoding a mature MK family protein, wherein said gene is ligated to (b),

(d) a transcription termination sequence of a methanol-inducible alcohol oxidase gene (AOX1) from *Pichia pastoris*,

(e) a selection marker gene functioning in *Escherichia coli* and methylotrophic yeast,

(f) a replication origin functioning in *Escherichia coli*, and

(g) 5' and 3' end sequences ~~within~~ of the AOX1 gene, wherein said sequences allow ~~for the~~ site-specific homologous recombination to a methylotrophic yeast chromosomal DNA to occur.

11 (previously presented). The transformant, according to claim 5, wherein said MK family protein is MK protein.

12 (previously presented). The transformant, according to claim 5, wherein said MK family protein is PTN protein.

13 (previously presented). The method, according to claim 8, wherein said transformant is pPIC9DP-hMK/SMD1168, said MK family protein is MK protein, and said methylotrophic yeast is strain SMD1168.

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14 (previously presented). The method, according to claim 8, wherein said transformant is pPIC9-hPTN/GS115, said MK family protein is PTN protein, and said methylotrophic yeast is strain GS115.